

UNITED STATES SPECIAL OPERATIONS COMMAND

Proposal Submission

The United States Special Operations Command's (USSOCOM) missions include developing and acquiring unique special operations forces (SOF) equipment, material, supplies and services. Desired SOF operational characteristics for systems, equipments and supplies include: lightweight and micro-sized; low signature and low observable; built-in survivability; modular, rugged, reliable, maintainable and simplistic; operable in extreme temperature environments; water depth and atmosphere pressure proof; certified transportable by aircraft, ship and submarine, and deployable by paratroop; LPI/LPD jam resistant C3; electronic warfare capable of disruption and deception; near real-time surveillance and intelligence; highly lethal and destructive; and compatible with conventional force systems. USSOCOM is therefore seeking small businesses with a strong research and development capability and understanding of the necessity for consideration of these SOF operational characteristics for systems. The topics on the following pages represent an introduction to a portion of the problems encountered by the SOF in fulfilling its mission.

USSOCOM invites the small business community to send its proposals directly to the following address:

United States Special Operations Command
Attn: SOKS/SBIR Program, Topic No. SOCOM94-_____
2408 Florida Keys Ave
MacDill Air Force Base, Florida 33621-5316

The proposals will be processed, then distributed to the appropriate technical office for evaluation. Inquiries of a general nature or questions concerning the administration of the SBIR program and proposal preparation should be addressed to:

United States Special Operations Command
Attn: Ms. Paulette Widmann
2408 Florida Keys Ave
MacDill Air Force Base, Florida 33621-5316
Tel: (813) 840-5443

The USSOCOM has identified four technical topics for this, the first of two SBIR Solicitations to be released during FY 1994 by DOD, to which small businesses may respond. The topics listed are the only topics for which proposals will be accepted. The topics were initiated by USSOCOM technical offices that manage the research and development in these areas. No direct communication with the topic author is possible.

Selection of proposals for funding is based upon technical merit and the evaluation criteria included in this solicitation. As funding is limited, USSOCOM reserves the right to select and fund only those proposals considered to be superior in overall technical quality and most critical. As a result, USSOCOM may fund more than one proposal in a specific topic area if the technical quality of the proposals are deemed superior, or it may fund no proposals in a topic area.

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FY 94.1 SBIR TOPIC INDEX

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SOCOM 94-002	Miniature RF Receiving Antennas
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SUBJECT/WORD INDEX TO THE USSOCOM SOLICITATION

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FY 94.1 SBIR TOPIC DESCRIPTIONS

SOCOM94-001 TITLE: Advanced Combat Rubber Raiding Craft (Small)

CATEGORY: Advanced Development; Marine Systems

OBJECTIVE: To design and demonstrate an advanced small craft, which has excellent sea keeping ability and can be launched from submarines for use by SOF personnel in littoral waters.

DESCRIPTION: Presently the Navy SEALs use small rubber craft which have poor seakeeping ability. The present craft are difficult to remove from the submarine's escape trunk. This difficulty requires additional time to extract the boat from the submarine, take it to the surface and insert the rigid floorboards. The seakeeping ability of this type of craft is extremely bad at a low rate of speed.

A craft is desired that is approximately 15 foot long, mounts a 35 HP outboard motor, can carry approx 1200 lbs of personnel and equipment (excluding motor), and can achieve approx 30 knots.

PHASE I: Develop and document craft design.

PHASE II: Refine design, build development models and test in laboratory and field conditions.

COMMERCIAL POTENTIAL: Non-military applications exist in the leisure craft and commercial work boat industries.

SOCOM94-002 TITLE: Miniature RF Receiving Antennas

CATEGORY: Advanced Development, Telecommunications

OBJECTIVE: Design and develop miniature radio frequency (RF) antenna and/or antennas allowing reception of high frequency (HF), very high frequency (VHF), and ultra high frequency (UHF) signals.

DESCRIPTION: Design, develop, and test antennas which can be attached to existing receivers that will be extremely low physical profile, yet allow reception in the HF, VHF, and UHF frequency ranges. Antenna(s) must be very small (man-packable), light weight and not increase weight, logistics and/or support requirements normally associated with radio communication equipment. The deliverables will be one or more antennas and any supplementary equipment necessary to support the antenna(s). The effort will focus on the design of the antenna(s) vice using advanced materials. The antenna(s) will be such that they do not in any way adversely effect existing interfaces or system performance of common radio communication equipment, and operate with the same interfaces.

PHASE I: Design, fabricate, and lab test a prototype capability.

PHASE II: Refine, design, build and test engineering prototypes in field conditions.

Commercial Potential: Antennas for commercial fixed sites for cellular, radio, wireless data networks, and mobile vehicles, aircraft, and ships.

SOCOM94-003 TITLE: Molded Photovoltaic Case for Electrical Equipment

CATEGORY: Advanced Development, Laser, Optics & Power Systems

OBJECTIVE: Design and develop a molded photovoltaic case for electrical equipment. The case would be used for continual trickle charge of system's power supply and/or provide primary power to system contained within the case.

DESCRIPTION: Design, develop, and test material which can be molded as a case for an electronic device and function as a trickle charge capability to the electronic device or as it's primary power. The objective case would be configured in such a way as to replace the existing case (external shell) of an electrical device, yet maintain the physical support, rigidity and protection provided by the original container. The case, as a unit, should be of the voltage and peak power delivery capability as the military BA-5590 and BB-590 batteries. It should be designed in such a way as to not dramatically increase the size or weight of the electronic device to which attached. The initial delivery would provide a demonstration of the capability, and the objective delivery would be the complete case/container of an electronic device selected by the government. The design of the material/item/shell will be such that it does not adversely effect existing interfaces or system performance of common radio communication equipment, and operate with the same interfaces.

PHASE I: Design, fabricate, and test a prototype capability.

PHASE II: Refine design, build and test production prototypes in field conditions.

Commercial Potential: Cases for laptop/notebook computers and cellular telephones that increase battery life.

SOCOM94-004 TITLE: Small Virtual Receiving Antenna

CATEGORY: Exploratory Development, Telecommunications

OBJECTIVE: Design and develop a single, small, electronically tunable virtual receiving antenna capable of duplicating electronically, but not physically, the wide variety of antennas necessary to receive high frequency (HF), very high frequency (VHF) and ultra high frequency (UHF) radio frequency (RF) signals.

DESCRIPTION: Design, develop, and test an electronically tunable antenna using advanced materials which can be attached to existing receivers that will be extremely low profile, yet allow reception in the HF, VHF, and UHF frequency ranges. Antenna must be very small (man-packable), light weight and not increase logistics and/or support requirements normally associated with radio communication equipment. The deliverable will be one antenna, any supplementary equipment necessary to support the antenna, and supporting documentation. The design of the antenna will use advanced concepts and be such that it does not in any way adversely effect existing interfaces or system performance of common radio communication equipment, and operate with the same interfaces.

PHASE I: Design, fabricate, and lab test a prototype capability.

PHASE II: Refine design, build and test engineering prototypes in field conditions.

Commercial Potential: Tunable antenna to be used for a variety of communications by automobiles, trucks, aircraft, and boats, to include cellular telephone, television, Global Positioning System (GPS), radio, data transmission, and facsimile.